



# Refrigerant Gas Detection

## Refrigerant Gas Detection

Most industrial sites use Refrigeration, Air Conditioning and Heat Pump applications to continue their processes correctly and safely. These applications use refrigerant gases in order to perform their functions.

But these gases has their own issues. No matter the refrigerant gases used in cold storage warehouses or in air conditioned houses, hotels, offices buildings with HVAC systems, they cannot easily undetectable (colorless, odorless) and release of them initiates health and safety problems. Therefore plants, storage areas, buildings require installation of a refrigerant gas detection system as most of them are in fact dangerous to humans:

Carbon Dioxide (CO<sub>2</sub>) displaces oxygen, causing asphyxiation and affects respiratory capacity Ammonia (NH<sub>3</sub>) is flammable and can also be lethal at high concentrations Hydrocarbons (HC) such as butane and propane are flammable, Fluorinated gases, often referred to as "F Gas" (CFCs, HCFCs, HFCs, HFOs), displace oxygen causing asphyxiation other than having serious environmental impact. CFCs not commercially available nowadays but some older plants may still have them in their system.

The EU regulation (517/2014), which came into force on the 1st January 2015, introduces a ban on new equipment using HFC refrigerants with a GWP of over 2500 by 2020. The regulation introduces a change in industry to use lower GWP options. As a result, a new family of refrigerants Hydro Fluoro Olefins (HFO) has been developed. The new class of lower Global Warming Potential refrigerants are named as "A2L". Refrigerant gas detection is very important in the industrial plants as well as refrigeration business. Depending of the application it may necessary to monitor these gases to prevent toxic and/or explosion danger. In terms of explosion danger, usually these gases needs bigger energy to ignite.

Hence leakage of these gases pose serious risks for the personnel due to toxic effect and the environment problems as they are increasing global warming. At the financial side these gases are expensive and companies should pay increasing bills to refill.

Prosense provides solutions for below most complete refrigerant gas types:

R-1233zd	0-5000ppm	
R-1234yf	0-2000ppm	0-5000ppm
R-1234ze	0-2000ppm	0-5000ppm
R-125	0-2000ppm	
R-134a	0-2000ppm	0-5000ppm
R-143a	0-2000ppm	
R-22	0-2000ppm	
R-227ea	0-2000ppm	
R-32	0-2000ppm	0-10000ppm
R-404a	0-2000ppm	0-5000ppm
R-404a	0-2000ppm	
R-407a	0-2000ppm	
R-407c	0-5000ppm	0-5000ppm
R-407f	0-2000ppm	
R-410a	0-2000ppm	0-10000ppm
R-417a	0-2000ppm	
R-422a	0-1000ppm	
R-422d	0-2000ppm	
R-424a	0-1000ppm	
R-427a	0-1000ppm	
R-434a	0-1000ppm	
R-438a	0-1000ppm	
R-442a	0-2000ppm	
R-448a	0-2000ppm	
R-449a	0-2000ppm	
R-450a	0-2000ppm	
R-450a	0-2000ppm	
R-452a	0-2000ppm	
R-452b	0-2000ppm	
R-453a	0-1000ppm	
R-454a	0-2000ppm	
R-454c	0-1000ppm	
R-455a	0-1000ppm	
R-507	0-2000ppm	
R-513a	0-2000ppm	
R-515A	0-2000ppm	
R-515B	0-2000ppm	
<b>SF6</b>	<b>0-2000ppm</b>	

Prosense provides solutions to eliminate dangers of these gases either in explosive or safe areas. Please contact to Prosense to get more information about gases and measurement ranges at [INFO@PROSENSE.COM.TR](mailto:INFO@PROSENSE.COM.TR)